

Claims

1. A wind turbine rotor including a rotor hub (3) and a plurality of blades (4), and where each blade root (16) is connected to said rotor hub through a pitch bearing (5)  
5 in such a manner that the pitch angle of the blade is adjustable by a turning of the blade about its longitudinal axis relative to the rotor hub, and where the blade is provided with at least one electrically conducting lightening down-conductor (6) extending in the longitudinal direction of the blade to the blade root and being electrically isolated from the pitch bearing (5), and where a spark gap (15) is provided between the lightning down-conductor and the rotor hub, said spark gap (15) being  
10 adapted to conduct a lightning current passing through the lightning down-conductor, **characterised in that** a sliding contact connection (7, 12) is provided parallel to the spark gap (15) between the lightning down-conductor (6) and the rotor hub (3), said sliding contact connection ensuring electrical contact between said  
15 lightning down-conductor (6) and said rotor hub (3) irrespective of the pitch angle of the blade.
2. A wind turbine rotor according to claim 1, **characterised in that** the sliding contact connection includes a collector shoe (12) fixedly mounted on the rotor hub  
20 (3), and an electrically conducting contact member (7) connected to the lightning down-conductor (6) of the blade and extending along a portion of the circumference of the blade root (16).
3. A wind turbine rotor according to claim 1, **characterised in that** the sliding contact connection includes a collector shoe (12) fixedly mounted on the blade root  
25 (16), and an electrically conducting contact member (7) in form of a rail mounted on the rotor hub (3).
4. A wind turbine rotor according to claim 2 or 3, **characterised in that** the spark  
30 gap (15) is provided between the contact member (7) and a spark gap member (11).

5. A wind turbine rotor according to claim 4, **characterised in that** the collector shoe (12) and the spark gap member (11) are combined in one contact unit (8).

6. A wind turbine rotor according to one of the preceding claims, **characterised**  
5 **in that** the lightning down-conductor (6) is connected to a lightning receptor adjacent the tip of the blade.

7. A wind turbine including a nacelle (2), a rotor shaft (17) and a wind turbine rotor according to one of the preceding claims.

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8. A wind turbine according to claim 7, **characterised in that** the rotor hub (3) includes an electrically conducting rotor hub conductor connected to the part (7; 11) of the spark gap (15) which is arranged on the rotor hub side, said rotor hub conductor further being connected through an additional spark gap to an electrically con-  
15 ducting nacelle conductor mounted on the nacelle (2).

9. A wind turbine according to claim 8, **characterised in that** the rotor hub conductor is electrically connected to the part (7; 12) of the slide contact connection which is arranged on the rotor hub side, said rotor hub conductor further being con-  
20 nected to the nacelle conductor through an additional sliding contact connection.

10. A wind turbine according to claim 9, **characterised in that** the nacelle conductor includes an annular contact member arranged coaxially with the rotor shaft (17), and that the rotor hub conductor is connected to an additional spark gap member and  
25 an additional collector shoe which defines the additional spark gap and the additional sliding contact connection, respectively, between the nacelle conductor and the annular contact member.

11. A wind turbine according to one of the claims 8 to 10, **characterised in that** the  
30 rotor hub conductor is electrically isolated from the rotor shaft (17).